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ABSTRACT

THREE OAHU COMMUNITY COLLEGES, LEEWARD, KAPIOLANI, AND HONOLULU, ALTHOUGH UNDER CENTRAL ADMINISTRATIVE CONTROL AND IN THE SAME CITY, HAD CERTAIN UNIQUE CHARACTERISTICS. THEY WERE EXAMINED FOR DIFFERENCES IN STUDENT INTELLECTUAL AND COLLEGE ENVIRONMENTAL FACTORS. LEEWARD COLLEGE SPECIALIZES IN PRE-PROFESSIONAL AND GENERAL CURRICULA; KAPICIANI, IN BUSINESS COURSES; AND HONOLULU IN TRADE-TECHNICAL PROGRAMS. THIS LAST IS IN THE INDUSTRIAL SECTION OF THE CITY AND IS EXPECTED TO BE THE CENTER FOR THE POVERTY-LEVEL STUDENT. A 19-ITEM QUESTIONNAIRE WAS SENT TO A RANDOM SAMPLE OF 450 STUDENTS FROM EACH OF THE THREE COLLEGES (10% OF THE TOTAL ENROLLMENT). DATA DEALT WITH PRESENT EMPLOYMENT STATUS OF THE STUDENT, TIME SPENT IN OUT-OF-CLASS STUDY, INTEREST IN COURSES, DIFFICULTIES IN COURSE WORK, QUALITY OF INSTRUCTION, EXPECTED USEFULNESS OF PRESENT STUDIES TO FUTURE WORK, WEEKLY ACTIVITIES, DEGREE OF FREEDOM IN SCHOOL AND OPPORTUNITY TO SOCIALIZE. A CHI-SQUARE ANALYSIS WAS USED TO DETERMINE THE RELATIONSHIPS BETWEEN CERTAIN FACTORS AND CURRICULUM, EMPLOYMENT, INTELLECTUAL STIMULATION, AND COLLEGE ATTENDED. (HH)

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SELECTED COMMUNITY COLLEGE INTELLECTUAL AND ENVIRONMENTAL FACTORS

A THREE COLLEGE STUDY

DEPARTMENT OF VOCATIONAL EDUCATION
THE PENNSYLVANIA STATE UNIVERSITY
UNIVERSITY PARK, PENNSYLVANIA

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UNIVERSITY OF CALIF.
LOS ANGELES

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TABLE OF CONTENTS

	Page
PREFACE	i
ABSTRACT	1
I STRATEGY	2
II THE RELATIONSHIPS BETWEEN CURRICULUM AND OTHER FACTORS	6
III THE RELATIONSHIPS BETWEEN COLLEGE ATTENDED AND OTHER FACTORS	9
IV THE RELATIONSHIPS BETWEEN INTELLECTUAL STIMULATION AND OTHER FACTORS	13
V THE RELATIONSHIP BETWEEN EMPLOYMENT AND OTHER FACTORS	16
VI THE RELATIONSHIP BETWEEN QUALITY OF INSTRUCTION AND OTHER FACTORS	17
VII THE RELATIONSHIP BETWEEN ANTICIPATED STUDY EFFECTIVENESS ON WORK AND OTHER FACTORS	19
VIII SUMMARY	20
APPENDICES	
A. CURRICULUM CODES	24
B. THE QUESTIONNAIRE	27
C. DETERMINATION OF SAMPLE SIZE	29

PREFACE

Much of the literature on the two-year college tends to give the impression that these institutions, although quite distinct from both the secondary schools and the senior colleges, are relatively homogeneous. However, it appeared to this investigator that there are certain significant intellectual and college environmental differences between community colleges. This study was initiated on that premise, which has the following two major hypotheses:

1. There are a number of intellectual factors that vary between students of different curriculums.
2. There are a number of environmental factors that vary between community colleges.

Having established the hypotheses, the next step was to develop an instrument that would solicit the kinds of information which would enable the investigator to test whether or not they were true. A 19 item student questionnaire was designed, which is included in the Appendix. In order to put these hypotheses to as severe a test as possible, it was decided to examine selected students from three community colleges serving the same urban area - the island of Oahu in the state of Hawaii. Oahu is also the city and county of Honolulu and over 75 percent of the state's population is concentrated on the island. Many of its characteristics are not unlike other urban regions in the United States (1).

The three community colleges were: a) Leeward Community College; b) Kapiolani Community College; c) Honolulu Community College. Each of these institutions, although under central administrative control, had characteristics that were unique.

The Leeward Community College had moved into a new campus just a few months before the study was conducted. Prior to that, classes were held in a cluster of condemned elementary school

1. Gillie, Angelo C. "Occupational Education in the Hawaiian Community Colleges." Technical Education News (Jan./Feb. 1970). New York: McGraw-Hill Book Company, 1970.

buildings in Pearl City. These very humble beginnings were soon forgotten when the student body was moved to a beautiful new campus overlooking Pearl Harbor. The major thrust of this institution was in the pre-professional and general education curriculum, as shown by the fact that about 50 percent of its students were enrolled in that curriculum (2).

The Kapiolani Community College, located not more than a mile or two from tourist oriented Waikiki Beach, concentrated on business related programs. About 60 percent of its entire student body in business type curriculums at the time of this study (2). This institution was hemmed in on all sides by other properties and like many urban campuses, were wondering how they were going to undergo physical expansion in the future.

The third school in this study, the Honolulu Community College, specialized in trade-technical type programs. About 55 percent of their total enrollment was in programs in this area (2). This college has, in the opinion of this investigator, the poorest physical facilities of the three colleges in the study. It is located in the industrial section of Honolulu, and borders upon some of the city's worst ghetto areas. Because of its location, it could become the community college center for the poverty level persons of Honolulu.

The community colleges in Hawaii are apparently viewed by their students as occupationally oriented institutions. Boyer (3:12) found that 60 percent of those 1968 high school seniors that planned to attend one of the community colleges on the island of Oahu, selected occupational programs. This is consistent with the actual enrollment distribution, where 70 percent of the students are in occupational type programs (1).

Therefore it is seen that this paper is the result of an effort to examine selected student intellectual factors and certain college environmental factors in three community colleges

2. Student Information System (SIS) Report. Fall 1968.
Honolulu: Institutional Research Office, University of Hawaii.
3. Boyer, Marcia A. 1967-68 Hawaii High School Senior Survey Community College System, University of Hawaii. Honolulu: Community College System, June 1968.

that each tend to have their major thrust in one curriculum. The differences found between the students and colleges (one which is primarily pre-professional oriented, a second which is largely concerned with business related programs, and a third which greatly emphasizes trade-technical programs) are reported in considerable detail herewith. The last section of this paper summarizes the findings.*

The early phases of this study, which includes the time during which the overall design was determined and the instrument was administered, was supported by the University of Hawaii's Community College System office. The remaining aspects of the endeavor, which by far was the most expensive in terms of time and resources, was supported by the Department of Vocational Education of The Pennsylvania State University.

The author wishes to express his appreciation to the assistance rendered by several individuals in the Hawaiian Community College system. In addition, special thanks is given to Arthur Oswald, who alone was responsible for the administration of the more than 400 copies of the instrument. It was through his patience and persistence that the returns were less than 5 percent smaller than the optimum sample size.

Angelo C. Gillie

*The chi-square tables for the relationships analyzed in this paper are available upon request from the author.

ABSTRACT

- Title:** Selected Community College Environmental Factors as Viewed by Students
- Investigator:** Dr. Angelo C. Gillie, Associate Professor
Department of Vocational Education
The College of Education
The Pennsylvania State University
- The Instrument:** A survey form was administered to a random quota sample of 10 percent of the students from each of the curriculum groups in the three community colleges on the island of Oahu in Hawaii (about 450 students). The curriculum groups: Business, Public Service, Technical, Health Related, Food Service, General and Pre-professional. The data received deals with present employment status of the student, time needed by him (weekly) for out of class study, interest in courses, difficulty in course work, quality of instruction, anticipated usefulness of present studies to future work, weekly activities of the student, degree of freedom in the school, and opportunity to socialize.
- Statistics:** The Chi-Square Analysis was used to ascertain relationships between: a. curriculum versus other factors; b. employment versus other factors; c. intellectual stimulation versus other factors; d. college attended versus other factors.
- Conclusions and Implications:** This study was an evaluation of certain curriculum and college environmental factors as found by the responses of a 10 percent random quota sample of the student population of three community colleges. The relationships found via the statistical analysis provides the basis to recommend certain changes in a) curriculum factors b) college environmental factors.

I STRATEGY

1. Objectives of the Study:

One of the purposes of the study was to determine how community college students view their college environment. This environment included social, academic, and general institutional experiences. These can, in turn, be used as one of the basis for recommending certain changes in curriculum and college environment.

The objectives of the study, may be stated in the form of two hypotheses, they are:

- a. There are a number of intellectual factors that vary between students of different curriculums.
- b. There are a number of environmental factors that vary between community colleges.

2. Population to be Sampled:

The aggregate from which the sample was chosen consisted of approximately 4,570 students (February 1968 figures) (1 and 2) enrolled in the three community colleges on the island of Oahu in the state of Hawaii. The sampled population was chosen from this population on a stratified random sampling (quota) basis.

Determination of Sample Size:

An important question needed to be answered prior to beginning the investigation, and that was: How big should our sample be? The answer to this query was largely determined by two factors: a. How close do we want to cover the parameters being measured? b. What chances of being successful in doing so are we willing to take? It was decided to settle for accuracy within 5 percent with a 1 in 20 chance of making a bad selection. By performing the necessary computations we arrived at an optimum sample population of 438 students to satisfy the parameters indicated above. (4) Details on the computation are included in the appendix.

1. Op. cited.
2. Op. cited.
4. Cochran, William G. Sampling Techniques. New York: John Wiley & Sons, 1965, pp. 53.

3. Data Collection:

Data was gathered by means of a 19 item survey instrument, which is included in the Appendix. Items within the instrument solicited information from the students that relate to the following topics:

- a. Interest in course work
- b. Difficulty of course work
- c. Quality of instruction
- d. Anticipated usefulness of studies to work
- e. Activities that students were involved with during a typical week
- f. Time required for out of class preparation
- g. Registration and other administrative problems
- h. Degree of student freedom within the institution
- i. Degree to which students have the opportunity to socialize

It is felt that all of these factors relate to the overall "environmental press" of the institutions.

4. The Frame:

The sampling units or frames, were selected on the basis of major curricular categories.* These are:

<u>Curriculum Number</u>	<u>Curriculum Codes</u>	<u>Curriculum</u>
1	799	General and Pre-Profession
2	789-740	Business Education
3	739-730	Public Service
4	729-720	Health Technology
5	699-610	Technology
6	609	General Education
7	603-605	Others
8	712-719	Hotel-Restaurant

*See the Appendix for the specific programs included in each of these curriculum categories.

These were later consolidated when the data was being analyzed so as to increase the cell sizes for the chi-square tests. After consolidation, the curriculum was as shown in Table 1.

CURRICULUM GROUPINGS

Code	Curriculum Category	Percentage of entire sample	Sample Size
1	General & Pre-Professional	21.3	89
2	Business related	27.0	113
3	Public Service	7.2	30
4	Health related, General Ed., and Hotel-Restaurant	8.1	34
5	Trade-Technical	19.4	81
6	Other (unclassified, auditors, special)	17.0	<u>71</u>
Total Sample			418

TABLE 1

5. Selection of the Sample:

As indicated earlier, proportional stratified random sampling (Quota Sampling) was used. Each strata was one of the curriculum categories listed above. About 10 percent of each strata was sampled randomly. Since this reflects the relative weight of that curriculum category to the entire population, it resulted in being proportional random sampling by strata. Hence we have proportional stratified random sampling. A final total of 418 completed questionnaires were received, just twenty under the optimum (for the accuracy desired) sample size of 438.

6. Pretest:

The original instrument was administered to ten students so as to detect defects in the questionnaire and also to determine how long it would take the respondents to complete it. This was done on February 19, 1968 with ten students from the Secretarial Science curriculum at the Kapiolani Community College.

Topic eleven of the questionnaire was reworded as a result of the pretest and it was found that the average time for completion of the instrument was ten minutes.

7. Organization of the Field Work:

The instrument was administered by Arthur Oswald with the cooperation of the administration of the three colleges. The randomly selected students were gathered in small groups for the purpose of administering the questionnaire. Because of certain difficulties, the instrument was mailed out to the Kapiolani Community College sample. In spite of this, a return of well over 90 percent was obtained. The entire field work took several weeks.

8. Summary and Analysis of Data:

The chi-square analysis was used to ascertain relationships between questionnaire topics. This test indicated that relationships did exist between the following:

- a. Curriculum and topics 2,3,4,5,6,8,9,10,12, 17,18, and 19.
- b. Intellectual stimulation and topics 1,5,6,7,8,9, 11,12,14,16,17, and 19.
- c. Employment and topics 1,4, and 5.
- d. College attended topics 1,6,8,9,10,15,17,19, and 21.
- e. Quality of instruction and topics 1,2,5,6,9,11,12, 14,16, and 20.
- f. Study effectiveness on work and topics 1,3,5, and 17.

9. Information Gained for Future Surveys:

This study has shown that this approach is a useful mechanism for helping to detect these aspects of the curriculum and college environment that they may be in need of change or removal. It is suggested that the reader refer to the Summary section of this report.

II THE RELATIONSHIPS BETWEEN CURRICULUM AND OTHER FACTORS

The chi-square test was used for the purpose of determining whether curriculum and each of the other factors in the questionnaire was related (5). The probability that the disparity between actual frequency and expected frequency happened by chance was found. These relationships where the probability was .05 or less (i.e. five chances in a hundred that the discrepancy occurred solely by chance) are those considered here. When the disparity between the actual and expected frequencies are too great to be accounted for on the basis of chance factors at the 5 percent level or less, we can then say that the two factors being considered are related.

Using the chi-square statistic, the factors listed in Table 2 were found to be related to curriculum at the .05 level or less.

FACTORS RELATED TO CURRICULUM

Topic	Questionnaire Topic
1	Employment
2	Student Expectations of their Studies to increase their effectiveness at work.
3	Did your college studies increase your effectiveness at work?
4	How interesting did they find their courses?
6	Quality of instruction.
7	Out-of-class preparation time.
8	Registration problems.
10	Were courses intellectually stimulating?
15	Did you write a paper during a typical week?
16	Did you discuss your studies with other students during a typical week?
17	Did you use the library more than once during a typical week?

TABLE 2

5. See Galfo, Arman J. and Miller Earl. Interpreting Education Research. Dubuque, Iowa: William C. Brown, Publisher, 1965, p. 213.

Table 1 is repeated, for easy reference in the analysis that follows.

CURRICULUM GROUPINGS

Code Number	Curriculum Category	Percentage of entire sample	Sample Size
1	General and Pre-Professional	21.3	89
2	Business Related	27.0	113
3	Public Service	7.2	30
4	Health related, General Ed., and Hotel-Restaurant	8.1	34
5	Trade-Technical	19.4	81
6	Other (unclassified, auditors, special)	17.0	<u>71</u>
Total Sample			418

TABLE 1

1. Curriculum versus Employment

A smaller proportion of the students were fully employed than expected in the pre-professional business and health related curriculums. On the other hand a larger number of students than expected had full time employment in the public service and "other" curriculum categories. A total of 45 percent of the sample were fully employed, 19.4 were employed part-time and 35.2 percent did not work.

2. Student Expectations of their Studies to Increase their Effectiveness at Work versus Curriculum

About 80 percent from the Public Service curriculum sample and 58 percent of the "other" curriculum group expected their studies to increase their effectiveness at work. On the other hand, only 21 percent of pre-professional curriculum and 30 percent of the trade-technical curriculum had the same expectations.

3. Curriculum versus Did Your Study Increase Your Effectiveness at Work?

In curriculum 3, (Public Service) 33 percent of the sample indicated that their study increased their effectiveness at work more than they had expected. About 20 percent of the curriculum 5 (Trade-Technical) sample indicated that their study increased their effectiveness at work less than they had earlier expected.

4. Curriculum versus How Interesting the Students found their Courses.

About 35 percent of the entire sample found their courses more interesting than expected and 11 percent less than they expected. The curriculums in which the proportion of respondents reporting this exceeded the expectations in curriculum 4 (Health, etc.) with 50 percent and 7 (Other) with 51 percent, while the business and trade-technical categories ran considerably below the expectations with 28 percent of their respective samples having the same response.

5. Curriculum versus Quality of Instruction.

Forty percent of the sample population indicated the instruction they received was better than they originally expected and 11 percent said it was worse than they expected. Respondents in curriculum 1 (Pre-professional), with 53 percent indicating their instruction was better than expected, were most pleased with the instruction they received. The proportion of respondents who indicated that instruction was "worse than expected" exceeded the expectation in curriculum 5 (Trade-Technical) with 17 percent.

6. Curriculum versus Out-of-Class Preparation Time.

About one fourth of the entire sample indicated their studies required more out-of-class time than they expected, and about 18 percent said they spend less time than they expected. While 35 percent of the students in curriculum 1 checked this response, only 7 percent in the Public Service curriculum and 12 percent in curriculum 4 (Health, etc.) did likewise.

7. Curriculum versus Registration Problems.

More registration difficulties than had been statistically expected were encountered by students in pre-professional with (47 percent) and Business (50 percent), and less than expected in Public Service (20 percent), Health (32 percent), and Trade-Technical (30 percent). About 37 percent of the entire

sample group said they ran into registration and administrative problems.

8. Curriculum versus Intellectual Stimulation Received from Studies.

About one fourth of the entire sample found more intellectual stimulation than they had expected from their studies, while 15 percent were at the other end of the spectrum - less intellectual stimulation than expected. The Pre-professional curriculum (30 percent), Health (41 percent), and "Other" (28 percent) exceeded the expectation for "intellectual stimulation greater than expected." At the other extreme, the expectation for "less intellectual stimulation than expected," was exceeded in curriculums 2 (Business) with 20 percent and 5 (Trade-Technical) with 19 percent.

9. Curriculum versus Did you Write a Paper during a Typical Week?

About 57 percent answered in the affirmative. Only in curriculum 1 (Pre-professional) were there more affirmative responses than statistically expected (74 percent). There were fewer than the expected number of responses in curriculum 3 (Public Service) with 37 percent and 7 (Other) with 52 percent.

10. Curriculum versus Whether or not They Discussed their Studies with other Students during a Typical Week.

Over three fourths (79 percent) of the students answered in the affirmative. The number of "yes" responses were considerably above expectations for "Other" (62 percent).

11. Curriculum versus Use of the Library more than once During a Typical Week.

Fifty-seven percent answered "yes". The number of affirmative responses exceeded the expectations in the Pre-professional curriculum (with 74 percent) and were considerably below the expectations in curriculum 7 ("Other") with 44 percent.

III THE RELATIONSHIPS BETWEEN COLLEGE ATTENDED AND OTHER FACTORS

As in the preceding section, when the chi-square tests probabilities were .05 or less, it was assumed that the disparity between the actual and expected frequency was not by chance and the two factors under consideration are related. This was found to

be the case with the college attended and the topics listed in Table 3.

FACTORS RELATED TO COLLEGE ATTENDED

Topic Number	Questionnaire Topic
	Curriculum
4	How Interesting They Find their Courses
6	Quality of Instruction
7	Out-of-Class Preparation Time
8	Whether or not Registration Presented Problems
13	Whether or not Student did Outside Reading each Week
15	Whether or not Student Wrote a Paper Each Week
17	Whether or not Student Used Library More than once a Week
19	Opportunity to Meet with and Socialize with Other Students

TABLE 3

1. College Attended versus Curriculum.

The distribution of curriculums among the three colleges is shown in Table 4 below.

CURRICULUMS* BY COLLEGE

College	Categories (% of each college student body)					
	1	2	3	4	5	7
H.C.C.	5.6	2.1	20.4	9.2	55.6	7.0
K.C.C.	11.9	59.6	0.0	11.9	0.7	15.9
L.C.C.	50.4	16.0	0.8	2.4	0.8	29.6

TABLE 4

As indicated in Table 4, the Honolulu Community College stresses the trade-technical type curriculums, the Kapiolani Community College has a preponderance of business related programs, and the Leeward Community College has half of its students in the pre-professional category. Therefore it is seen that each of the colleges tends to focus much of its program impact on one of the categories.

2. College Attended versus How Interesting They Find Their Courses.

Thirty-five percent of the total sample indicated that they found their courses more interesting than they had anticipated while only eleven percent said they found them less interesting than expected. The Leeward Community College group had 45 percent of the responses in the more interesting than expected category.

3. College Attended versus Quality of Instruction.

This relationship is analyzed in Section VI.

4. College Attended versus Out-of-Class Preparation Time.

Twenty-six percent of the total sample indicated they were spending more time than they earlier expected for out-of-class preparation. It should be pointed out that a greater proportion

- *1 - Pre-professional
- 2 - Business
- 3 - Public Service
- 4 - Health, et. al.
- 5 - Trade-Technical
- 7 - Other

of the Leeward sample fell in this category than the statistical expectation whereas the proportion of the Honolulu and Kapiolani student body was well below the statistical expectation. This was confirmed by the response to the sub-item "out-of-class preparation was less than you expected": the responses were 23 percent for Honolulu, 18 percent for Kapiolani and 14 percent for Leeward.

5. College Attended versus Problems with Registrations.

Thirty-seven percent of the entire sample said they encountered registration and other administrative problems. It should be noted that the Kapiolani sample had 48 percent "yes" to the question, Leeward had 35 percent and Honolulu only 26 percent.

6. College Attended versus Whether or Not the Student did Outside Reading Each Week.

Seventy percent of the entire sample indicated that they did outside reading during a typical week. Seventy-seven percent of the Leeward sample, seventy-three percent of the Honolulu sample and 62 percent of the Kapiolani sample checked the "yes" response.

7. College Attended versus Whether or Not the Student Wrote a Paper Each Week.

Of the total sample, 57 percent checked "yes". By college: Leeward yes responses were 70 percent, Honolulu had 51 percent and Kapiolani had 50 percent.

8. College Attended versus Whether or Not the Student Used the Library more than Once a Week.

Total "Yes" was 57 percent; Leeward led with 68 percent, followed by Honolulu with 56 percent and Kapiolani with 48 percent.

9. College Attended versus Opportunity to Socialize with Other Students.

The question was asked such that the respondent compared his college socialization opportunities with those he experienced in high school. Thirty-two percent of the entire sample indicated the opportunities were more than they were in high school and 35 percent said they were less than what they found to be the case in high school. The Leeward group felt they had the greatest socialization opportunities, with 42 percent of them indicating it as being better than their high school socialization opportunities. Forty-two percent of the Kapiolani sample indicated that their socialization opportunities were less than what they found in high school.

IV THE RELATIONSHIPS BETWEEN INTELLECTUAL STIMULATION AND OTHER FACTORS

Here again, when the chi-square probabilities were .05 or less, it was assumed that the disparity between the actual and expected frequency was not by chance and the two factors under consideration were related. This was found to be the case with intellectual stimulation and the topics listed in Table 4.

FACTORS RELATED TO INTELLECTUAL STIMULATION

Topic Number	Questionnaire Topic
	Curriculum
3	Has Your Study Increased Your Effectiveness at Work?
4	Course Interest
5	Course Difficulty
6	Quality of Instruction
7	Time Required for Out-of-Class Preparation
9	Expectations for Studies to be Intellectually Stimulating?
12	Whether or Not Student Consulted with Faculty Member During Each Week
14	Whether or Not Student Participated in Class Lectures Each Week
15	Whether or Not Student Wrote Paper Each Week
17	Whether or Not Student Used the Library Each Week

TABLE 4

1. Intellectual Stimulation versus Curriculum.

This relationship is analyzed in Section 2.

2. Intellectual Stimulation versus Whether or Not Their Studies Has Increased their Effectiveness at Work.

Thirty-seven percent of the sample that indicated the intellectual stimulation was about as expected also said that the degree to which their studies increased their effectiveness at work was about as much as they had expected. Only six percent of those who found they were intellectually stimulated more than they expected also indicated that their studies increased their effectiveness at work less than they had expected.

3. Intellectual Stimulation versus Course Interest.

Sixty-five percent of those who indicated the intellectual stimulation as greater than expected also indicated that their courses were more interesting than they had expected. Also, 63 percent of those who found the intellectual stimulation to be about what they expected also found their courses to be as interesting as they expected. And 56 percent of those that found the intellectual stimulation to be less than expected their courses to be as interesting as they expected.

4. Intellectual Stimulation versus Course Difficulty.

Sixty-five percent of those who indicated intellectual stimulation was greater than expected also indicated their courses were about as difficult as they had expected. Also, 74 percent of those who found intellectual stimulation to be as expected also found course difficulty to be about as expected.

5. Intellectual Stimulation versus Quality of Instruction.

Sixty-three percent of those who indicated intellectual stimulation was greater than expected also indicated the instruction they received was better than expected. Also, 53 percent of those who indicated the intellectual stimulation was about as expected also said the instruction they received was about as good as they expected. Eleven percent of the entire sample indicated that instruction was worse than expected while 40 percent of the whole group said instruction was better than expected.

6. Intellectual Stimulation versus Course Preparation Time.

Just over one fourth (26 percent) of the entire group said the time required for out-of-class preparation was more than they expected. For those students who indicated intellectual

stimulation was greater than expected, 33 percent said preparation time was more than expected and 55 percent said it was about as much as expected. Fifty-six percent of the total sample indicated that preparation time was about as much as they expected.

7. Intellectual Stimulation versus Expectations of being Intellectually Stimulated.

Seventy-eight percent of the entire group said they had expected to be intellectually stimulated by their studies, with 24 percent of these indicated they were intellectually stimulated more than they had expected.

8. Intellectual Stimulation versus Whether or Not they Consulted with a Faculty Member at Least Once a Week.

Sixty percent of those whose intellectual stimulation was about as expected did consult with a faculty member at least once a week; this proportion was 47 percent for those who were intellectually stimulated more than expected and 42 percent for those who were intellectually stimulated less than expected. Looking at the total sample, 51 percent said they consulted with a faculty member at least once a week.

9. Intellectual Stimulation versus Participation in Class Lectures.

Seventy percent of the entire sample said they did participate in the class lectures during each week. Those who indicated intellectual stimulation was greater than expected had 79 percent of their group consider themselves in participants in class lectures.

10. Intellectual Stimulation versus Whether or Not the Student Wrote a Paper Once a Week.

Fifty-seven percent of the entire sample said they did write at least one paper each week. This proportion rose to 63 percent for those respondents who said intellectual stimulation was greater than expected.

11. Intellectual Stimulation versus Use of the Library.

Fifty-seven percent of the total sample indicated that they did use the library at least once a week. Those students who said they did not expect to be intellectually stimulated had 48 percent of their group respond affirmatively to the question.

V THE RELATIONSHIP BETWEEN EMPLOYMENT AND OTHER FACTORS.

As in the preceding sections, when the chi-square probabilities were .05 or less, it was assumed that the disparity between the actual and expected frequency was not by chance and the two factors under consideration were related. This was found to be the case with employment and the questionnaire topics listed in Table 5.

FACTORS RELATED TO EMPLOYMENT

Topic Number	Questionnaire Topic
	Curriculum
2	Did You Expect Your Study to Increase Your Effectiveness at Work?
3	Has Your Study Increased Your Effectiveness at Work?

TABLE 5

1. Employment versus Curriculum

This relationship was analyzed in Section II.

2. Employment versus Expectations of Study to Increase Work Effectiveness.

Sixty-five percent of the students that were employed full time said they expected their studies to increase their work effectiveness while 49 percent of the part-time employed students indicated the same.

3. Employment versus Whether or Not their Studies have Increased Their Effectiveness at Work.

Fifty percent of the full time employed student said their studies increased their effectiveness at work to the level at which they originally expected, and 53 percent of the part-time employed sample said the same.

VI THE RELATIONSHIP BETWEEN QUALITY OF INSTRUCTION AND OTHER FACTORS.

Here again, when the chi-square probabilities were .05 or less, it was assumed that the disparity between the actual and expected frequency was not by chance and the two factors under consideration were related. This was found to be the case with quality of instruction and the instrument items listed in Table 6.

FACTORS RELATED TO QUALITY OF INSTRUCTION

Topic Number	Questionnaire Topic
	Curriculum
	College Attended
3	Did your Study Increase your Effectiveness at Work?
4	Course Interest
7	Time Required for Out-of-Class Preparation
9	Did You Expect your Studies to be Intellectually Stimulating?
10	The Extent to Which the Student was Intellectually Stimulated
12	Whether or Not the Student Consulted with a Faculty Member each Week
14	Whether or Not the Student Participated in Class Lectures each Week

TABLE 6

1. Quality of Instruction versus Curriculum

This relationship was described in Section II.

2. Quality of Instruction versus College Attended

Instruction was rated as "better than expected" by 38 percent of the Leeward group, 34 percent of the Honolulu group, and

28 percent of the Kapiolani sample. Looking at the other end of the spectrum: Instruction was rated as "worse than expected" by 36 percent of the Honolulu and Kapiolani groups and 28 percent of the Leeward sample.

3. Quality of Instruction versus Whether or Not their Studies have Increased Work Effectiveness

Twenty-seven percent of those who rated their instruction as better than expected also said their studies have increased their effectiveness at work more than what they had expected. About 39 percent of those who considered their instruction to be about as good as they had expected also said their studies have increased their effectiveness at work to about the extent they had expected.

4. Quality of Instruction versus Course Interest

Sixty-five percent of those who rated their instruction as about as they expected also rated their courses as about as interesting as they expected. Fifty-six percent of those who saw their instruction as better than expected also rated course interest as more than expected. Also, 35 percent of the entire sample rated course interest as more than expected while 54 percent said it was about as expected.

5. Quality of Instruction versus Out-of-Class Preparation Time

Of those who rated quality of instruction as better than expected: 32 percent said the preparation time as greater than expected and 58 percent the preparation time was about the same as they first expected. Also, 54 percent who rated quality of instruction as about as expected said preparation time was about as expected.

6. Quality of Instruction versus Expectations of Finding their Studies Intellectually Stimulating

Of those who found the instruction they received as better than expected, 81 percent said they expected their studies to be intellectually stimulating. About 75 percent of those who viewed the quality of instruction as about what they expected, expressed that they expected their studies to be intellectually stimulating.

7. Quality of Instruction versus Whether or Not the Student was Intellectually Stimulated

This relationship is analyzed in Section IV.

8. Quality of Instruction versus Whether or Not the Student Consulted with a Faculty Member at Least Once a Week

Fifty-eight percent of those who rated instruction as better than expected in Curriculum 1 also said they consulted with a faculty member at least once a week. For the entire sample, 40 percent of those who rated instruction as better than expected consulted with faculty while 49 percent of those who rated instruction as "about as expected" said they consulted with a faculty member at least once each week.

9. Quality of Instruction versus Participation in Class Lecture

Here again, the greatest amount of involvement occurred for those who rated their instruction as better than expected - almost 80 percent of them indicated participating in class lectures during a typical week. About 70 percent of the entire sample said they participated in class lectures.

VII THE RELATIONSHIP BETWEEN ANTICIPATED STUDY EFFECTIVENESS ON WORK AND OTHER FACTORS

When the chi-square probabilities were .05 or less, it was assumed that the disparity between the actual and expected frequency was not by chance and the two factors under consideration were related. This was found to be the case with study effectiveness and the questionnaire items listed in Table 7.

Topic Number	Questionnaire Topic
	Curriculum
	Employment
3	Has Your Study Increased your Effectiveness at Work?
15	Did you Write a Paper during a Typical Week?

TABLE 7

1. Anticipated Study Effectiveness on Work and Curriculum

This relationship is analyzed in Section II.

2. Study Effectiveness and Employment

Seventy-five percent of those anticipated their study effectiveness to be improved by their studies were fully employed, while the remaining 25 percent were employed part-time.

3. Anticipated Study Effectiveness and Actual Study Effectiveness Achieved from Studies

This relationship is analyzed in Section V.

4. Anticipated Study Effectiveness and Writing Papers each Week

About half (48 percent) of those who anticipated their studies to increase their effectiveness at work also said they wrote at least one paper during a typical school week. This percentage increased to 62 percent for those who did not expect their studies to increase their effectiveness at work.

VIII SUMMARY

This last section of the report is devoted to summarizing the findings of the study on an item by item basis. The more detailed aspects of these findings may be found in Sections II through VII.

Employment - Forty-five percent of the entire sample was employed full time while another 19 percent were employed on a part-time basis. The lowest rate of full time employment was found in the Pre-professional, Business and Health curriculums (See Section II for complete identification of curriculums) and the highest rate of full time employment was found in Public Service and "Other" curriculums.

Expectations of their Study to Increase their Effectiveness at Work

The highest proportion of such expectations were found in the Public Service curriculum (80 percent) and "Other" curriculum (58 percent). Those curriculums with the lowest proportion of students having these expectations were Pre-professional (21 percent) and curriculum Trade-Technical (30 percent).

Did Your Studies Increase Your Effectiveness at Work?

The Public Service curriculum sample had the greatest proportion of "yes" responses with 33 percent and the lowest was from curriculum 5 (Trade-Technical) with 20 percent of the responses being in the affirmative.

Were the Courses Interesting?

Thirty-five percent of the entire sample, and 50 percent of those in the Health and "Other" curriculums said their courses generally were more interesting than they expected.

Course Difficulty

The majority of the respondents found their courses to be about as difficult as they had earlier expected them to be.

Quality of Instruction

Thirty-eight percent of the Leeward group, 34 percent of the Honolulu group, and 28 percent of the Kapiolani students indicated that the instruction they received was generally better than what they had expected. Looking at the other side of the coin, 36 percent of the groups from Honolulu and Kapiolani, and 28 percent from Leeward, indicated that the instruction they received was worse than they had expected. The greatest number of responses to instruction being better than expected was found in the Pre-professional curriculum (with 53 percent) and the highest frequency for instruction being worse than expected came from the curriculum 5 (Trade-Technical) sample.

Time Required for Out-of-Class Preparation

The Leeward C.C. sample had the greatest number of responses in the "more than expected" category. The largest proportion of students indicating preparation time was less than expected was found in the Honolulu C.C. and Kapiolani C.C. samples. Twenty-six percent of the entire sample said the time required for out-of-class preparation was more than they had expected.

Problems with Registration and Other Administrative Procedures

From the entire sample, 37 percent responded with "yes" to the question. Kapiolani led the way with 48 percent of their students indicating they ran into registrations problems. The other two community colleges followed with 35 percent for the Leeward sample and 26 percent for the Honolulu group.

Did you Expect Your Studies to be Intellectually Stimulating?

Seventy-eight percent of the entire sample indicated that they had such hopes.

To What Extent was it Intellectually Stimulating?

Almost a quarter (24 percent) of the entire sample indicated that they were intellectually stimulated more than they had expected. This figure ran at 30 percent for curriculum 1 (Pre-professional), 41 percent for curriculum 4 (Health), and 28 percent for curriculum 7 ("Other"). The two groups showing the greatest proportion of responses for "intellectual stimulation was less than expected" were the business curriculum (20 percent) and Trade-Technical curriculum (19 percent).

Did You Study for Three Hours Without Interruption During a Typical College Week?

No relationships were found between this item and any other.

Did you Consult with a Faculty Member during a Typical College Week?

Fifty-one percent of the total sample said yes. Sixty percent of those who said they were "intellectually stimulated about as they expected to be" indicated yes to this question. Of those who said they were intellectually stimulated more than they expected, 47 percent responded affirmatively while 42 percent said yes from that group who indicated they were intellectually stimulated to a lesser extent than they had expected. Fifty-eight percent of those who rated their instruction as better than expected said they consulted with faculty at least once each college week, while this proportion fell to 49 percent for those who said their instruction was about as they expected.

Did you Read anything not Assigned during a Typical College Week?

From the total sample population, 70 percent said yes. Breaking this down by college: Leeward C.C. = 77 percent; Honolulu C.C. = 63 percent; Kapiolani C.C. = 62 percent.

Did you Participate in Class Lectures during a Typical College Week?

From that group who said they were intellectually stimulated more than they had expected, 79 percent answered yes. From the group that rated their quality of instruction as greater than indicated, 80 percent responded affirmatively. Seventy percent of the entire sample said yes.

Did you Write a Paper during a Typical College Week?

Fifty-seven percent of the entire sample said yes. Curriculums with the highest proportions of yeses were pre-professional with 74 percent, public service with 37 percent, and "Other" with 52 percent. Breaking this down by college: Leeward = 70 percent; Honolulu = 51 percent; and Kapiolani = 50 percent. From the group who indicated they obtained greater intellectual stimulation than they expected, 63 percent responded affirmatively. Forty-eight percent of those who anticipated that their studies would increase their effectiveness at work said yes, while 62 percent of those who did not expect their studies to increase their effectiveness at work checked the same response.

Did you Meet and Discuss Assignments with other Students during a Typical College Week?

Seventy-nine percent of the entire sample said yes. The highest response was found in the Trade-Technical curriculum (with 84 percent).

Did you Use the Library more than Once During a Typical College Week?

The entire sample response was 57 percent in the affirmative. Curriculum 1 (Pre-professional) had the highest response (with 74 percent). By colleges: Leeward = 68 percent; Honolulu = 56 percent; Kapiolani = 48 percent.

The Degree of Freedom Allowed Students

No relationship found between this and any other item.

The Opportunity to Meet and Socialize with other Students

Thirty-five percent of the entire sample said that the opportunity was greater than high school. Leeward C.C. respondents were higher, with 42 percent checking that category. Forty-two percent of the Kapiolani group said the opportunity to socialize was less than what they had in high school.

APPENDIX

A. CURRICULUM CODES

<u>Curriculum Code</u>	<u>Major Code</u>	<u>Major</u>
1	799	General & Pre-Prof
1	769	Secretarial Science
1	728	Practical Nursing
1	729	Dental Assisting
2	789	Accounting
2	777	Computer Science
2	778	Data Processing, Computer Oper
2	779	Data Processing, Prog & Sys Anal
2	756	Management
2	758	Merchandising
2	757	Sales
2	759	Sales & Management
2	763	Clerical
2	761	Clerical, Bookkeeping
2	764	Clerical, General
2	762	Clerical, Key Punch
2	768	Clerical, Steno
2	765	General Business
2	766	General Office Training
3	738	Fire Science
3	735	Library Technology
3	739	Police Science

<u>Curriculum Code</u>	<u>Major Code</u>	<u>Major</u>
4	727	Nurses' Aide Training
5	699	Aeronautics Technology
5	688	Apparel Design & Construction
5	689	Fashion Arts
5	639	Architectural Drafting Tech
5	679	Auto-Body Repair & Painting
5	678	Automotive Mechanics Tech
5	677	Heavy Equipment Maintenance & Repair
5	669	Carpentry
5	662	Construction Technology
5	668	Industrial Electricity
5	667	Plumbing
5	649	Civil Engineering Technology
5	659	Cosmetology
5	635	Electronic Technology
5	634	Electronic-Audio, Radio & TV
5	629	Machine Shop
5	625	Metal Working Pro & Tech
5	628	Sheet Metal
5	627	Welding
5	619	Refrigeration Technology
6	609	General Education

<u>Curriculum Code</u>	<u>Major Code</u>	<u>Major</u>
7	603	Unclassified
7	601	Auditor
7	605	Special
8	718	Commercial Baking
8	715	Commercial Food Service
8	713	Commercial Food Service, Cul Arts
8	712	Commercial Food Service, Dining Rm
8	719	Food Services
8	714	Food Service, Management

Note: Curriculum Code numbers 4,6, and 8 were combined into code number 4 so as to increase cell sizes.

Please place an "X" in the appropriate box.

Curriculum: ☒ ☒ ☒ ☒ N.R. College ☒ Hon ☒ Kap ☒ Leeward

1. Are you:

- a. ☒ employed full-time (more than 15 hours per week)
- b. ☒ employed part-time (less than 15 hours per week)
- c. ☒ not employed

If employed, what is your job title? _____

In a sentence, tell what you do. _____

2. If employed, did you expect your study to increase your effectiveness at work?

- a. ☒ yes
- b. ☒ no
- c. ☒ not employed - Check this box if you marked box c in item 1.

3. If yes, has your study increased your effectiveness at work?

- a. ☒ more than you expected
- b. ☒ about what you expected
- c. ☒ less than you expected
- d. ☒ not employed - Check this box if you marked box c in item 1.

4. Courses generally are:

- a. ☒ more interesting than you expected
- b. ☒ about as interesting as you expected
- c. ☒ less interesting than you expected

5. Courses generally are:

- a. ☒ more difficult than you expected
- b. ☒ about as difficult as you expected
- c. ☒ less difficult than you expected

6. Instruction generally is:

- a. ☒ better than you expected
- b. ☒ about as you expected
- c. ☒ worse than you expected

7. Is the total time required for out-of-class preparation:

- a. ☒ more than you expected
- b. ☒ about what you expected
- c. ☒ less than you expected

8. Do you find registration and other administrative procedures a problem?

- a. ☒ yes
- b. ☒ no

If yes, what are those? _____

9. Did you expect your studies to be intellectually stimulating?
- a. ☒ yes
b. ☐ no
10. If yes, is the intellectual stimulation:
- a. ☒ more than you expected
b. ☐ about what you expected
c. ☐ less than you expected
d. ☐ none - Check this box if you checked box b in item 9.

During a typical week at the Community College, do you:

11. Engage in at least one voluntary study period of three or more consecutive hours? (Either in school or at home?)
- a. ☒ yes
b. ☐ no
12. Consult with faculty member?
- a. ☒ yes
b. ☐ no
13. Read anything not assigned?
- a. ☒ yes
b. ☐ no
14. Participate in class lectures?
- a. ☒ yes
b. ☐ no
15. Write a paper?
- a. ☒ yes
b. ☐ no
16. Meet with and discuss assignments with other students?
- a. ☒ yes
b. ☐ no
17. Use the library more than once?
- a. ☒ yes
b. ☐ no
18. The degree of freedom allowed students is:
- a. ☒ more than high school
b. ☐ about the same as high school
c. ☐ less than high school
19. The opportunity to meet and socialize with other students is:
- a. ☒ more than high school
b. ☐ about the same as high school
c. ☐ less than high school

C. DETERMINATION OF SAMPLE SIZE

(a) The following question was raised: How close do we wish to cover the parameter to be measured? i.e. how accurate?

It was decided to settle for accuracy to within $\pm 5\%$

(b) The next question was: What chances of being successful in doing so are we willing to take?

The decision was a 1 in 20 chance in making a bad selection was suitable - i.e. a .05 confidence level.

Using the two answers above, we then went about computing the required sample size.

Solution

n = sample size, p = sample percentage (assuming a normal distribution)

P = property of the population we want to measure in percentage - i.e. the percentage of the entire population predicted to have the property being examined.

p lies in the range $(P \pm 26_p)$ apart from a 1 in 20 chance of a bad choice.

$$6_p = \left[\frac{PQ}{n} \right]^{1/2}$$

since $\pm p = 26_p = 5$

(from the normal distribution table)

$$\text{then } 2 \left[\frac{PQ}{n} \right]^{1/2} = 5$$

squaring both sides,

$$\frac{4PQ}{n} = 25$$

and

$$n = \frac{4PQ}{25}$$

Now, assume P lies between 40% and 60%, then using the PQ Table 3

$$PQ(40\%) = 2400; \quad PQ(50\%) = 2500; \quad PQ(60\%) = 2400$$

substituting,

$$n = \frac{4(2400)}{25} = 384 \text{ students}$$

with P = 50% then PQ = 2500, and

$$n = \frac{4(2500)}{25} = 400 \text{ students}$$

And the finite population correction (fpc) is:

$$n = \frac{n_o}{1 + \frac{n_o - 1}{N}}$$

where n_o = original sample without fpc = 400; N = total population =
 $1383 \text{ (H.C.C.*)} + 1538 \text{ (K.C.C.**)} + 1649 \text{ (L.C.C.***)} = 4570$

substituting values:

$$n = \frac{400}{1 - \frac{(400 - 1)}{4570}} = 438$$

Therefore, our optimum sample size for our parameters is 438 students, which is just under ten percent of the total population.

4. Cochran, William G. op. cited.

- * H.C.C - Honolulu Community College
- ** K.C.C - Kapiolani Community College
- *** L.C.C - Leeward Community College